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FEDERAL-STATE-PRIVATE
COOPERATIVE SNOW SURVEYS

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PROCUREMENT SECTION
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WATER SUPPLY OUTLOOK FOR UTAH

Prepared by

U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

UTAH STATE DEPARTMENT OF NATURAL RESOURCES -- DIVISION OF WATER RIGHTS

In cooperation with U.S. Forest Service, Bureau of Reclamation, Utah Fish and Game Dept., Utah State University, U.S. National Park Service, U.S. Geological Survey, and other Federal, State, and private organizations.

AS OF
OCT. 1, 1971

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters of key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 970, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK

as of

OCTOBER 1, 1971

Utah water supplies for the 1971 spring and summer season were good to excellent in the northern part of the State. Some streams produced even more water than high forecasts predicted on April 1.

Southern Utah generally did not receive as much late spring precipitation and forecasts were a little higher than observed flows. Most areas had adequate water supplies during the early part of the season but streams in this part of the State did not peak as high as usual and reports indicate some high flow water rights were not satisfied.

Reservoir storage as of October 1 was about 150% of the 15-year average and about 6% better than last year at this time on 12 of Utah's key storage reservoirs.

Storms near the end of September improved watershed soil moisture in northern Utah but added little to the dry watersheds of the southern half of the State.

Testing has been completed on the 6 electronic data stations installed last year. All six plus one more to be installed on the Cedar Mountains between Cedar City and St. George are being readied to report daily information this winter on snow water content, total precipitation and air temperature. This up-to-date information is expected to be very helpful in the better management of Utah's water supplies.

The following table shows the April 1 forecasts on key streamflow stations over the State and the provisional flows recorded at these stations.

<u>Station</u>	<u>Forecast Period</u>	<u>April 1 Forecast (1000 a.f.)</u>	<u>Measured Flow for the period (1000 a.f.)</u>
Weber nr Oakley	April-June	130	124
Big Cottonwood nr Salt Lake	April-July	41	42
Whiterocks nr Whiterock	Apr-July	55	59
Salina Crk nr Salina	April-June	10.0	12.2
Beaver nr Beaver	April-July	21	19.4

RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average†
	<u>GREAT BASIN</u>				
<u>Bear River</u>	Bear Lake	1421.0	1241.2	1110.5	889.2
	Woodruff Narrows	26.5	12.7	10.1	- -
<u>Beaver River</u>	Minersville(Rky.Fd)	23.3	- -	- -	3.5
<u>Little Bear</u>	Hyrum	15.3	10.3	10.2	3.8
	Porcupine	11.3	4.7	.7	- -
<u>Ogden</u>	Causey	6.9	3.5	2.8	- -
	Pineview	110.1	61.8	28.4	12.7
<u>Provo</u>	Deer Creek	149.7	104.6	98.9	88.9
<u>Sevier River</u>	Gunnison	18.2	2.7	4.6	- -
	Otter Creek	52.5	12.1	28.2	10.1
	Piute	71.8	18.5	11.8	6.5
	Sevier Bridge	236.0	97.4	125.7	41.0
<u>Spanish Fork</u>	Strawberry	270.0	186.4	177.1	123.0
<u>Utah Lake</u>	Utah Lake	883.9	637.0	642.3	440.2
<u>Weber</u>	East Canyon	48.1	34.6	34.0	9.5
	Echo	73.9	36.2	33.0	15.8
	Lost Creek	20.0	14.6	13.4	- -
	Rockport	60.9	45.5	40.2	19.6
	Willard Bay	193.3	158.0	172.4	- -
	<u>COLORADO RIVER DRAINAGE</u>				
<u>Ashley Creek</u>	Steinaker	33.3	16.2	17.5	- -
<u>Ashley Creek</u>					
<u>Colorado</u>	Blue Mesa	829.5	532.3	810.4	- -
	Lake Powell	25002.0	13609.0	12039.0	- -
<u>Green</u>	Flaming Gorge	3749.0	2931.0	1791.0	- -
<u>Lake Fork</u>	Moon Lake	35.8	8.2	4.5	7.2
<u>Price River</u>	Scofield	65.8	37.6	38.8	17.7
<u>San Rafael</u>	Joe's Valley	54.6	37.5	38.6	- -
<u>San Juan</u>	Navajo	1696.0	993.2	1261.1	- -
<u>Strawberry</u>	Starvation	165.3	139.6	152.3	- -

1971 WATER YEAR

WEBER-OGDEN RIVER BASINS

UTAH PRECIPITATION DATA

1971 WATER YEAR

STATION NAME	OCT.-DEC.	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY-SEPT.	TOTAL
MAGPIE								8/12	39.07
MIDDLE FK OGDN								0/11	49.99
PARLEY CYN SMT	12/23 15.60	1/28 1.50	2/25 5.18	3/30 5.28	4/29	5/27 2.76	6/17 1.80	9/29 3.60	37.27
PORCUPINE									
REDDON MINE UP	10/29 3.70		2/25 19.63	3/30 3.92	4/28	5/27 2.40			
SAGEBRUSH FLAT	12/01 7.70	1/29 7.65	2/25 1.50	3/29 2.25	4/29	5/27 0.84	7/09 1.85		
SERGEANT LAKES				4/01 2.45	4/29				
SHINGL MIL FLT				4/01 3.79					
SM MOREHOUSE	12/30 12.41	1/28 4.21	2/24 1.89	3/29 2.75	4/27	5/26 2.15		9/30 5.62	31.28

UTAH LAKE-JORDAN RIVER BASIN

CLEAR CR RDG 2	10/29	3.09	1/28	11.45	2/23	1.85	3/29	2.98	4/28	2.50	5/28	1.45	7/01	1.24	9/30	3.70	27.02
DANIEL-STR SMT	12/30	12.83	1/28	3.01	2/24	2.12	3/29	2.48	4/27	2.57	5/27	1.64			9/27	4.33	30.22
DESERET PEAK															6/09		37.17
DUTCHMAN RS	12/09	9.61			3/01	11.40	3/31	1.85	4/30	3.00	5/28	1.03			1/08	14.05	40.94
EAST PORTAL	12/30	11.29	1/30	2.35	2/26	2.50	3/30	1.90	4/30	2.65	5/31	1.85	7/01	0.14	0/01	3.15	25.83
HOBBLE CR SMT	10/29	2.48			2/24	15.18	3/30	2.45	4/29	3.02	5/28	0.78			9/30	4.48	28.39
LAKE CREEK	10/30	4.20											7/01	27.90	9/27	4.05	36.15
LAMBS CANYON 2	12/31	10.55	1/29	1.88	2/25	3.00	3/30	4.36	4/29	2.25	5/27	2.30			9/29	6.40	30.74
MIDDLE CANYON	12/29	13.39			2/16	4.14	3/31	1.64	4/29	3.89	5/28	1.88					
PAYSON RS	12/30	12.40	1/27	1.00	2/22	2.52	3/26	3.00	4/27	3.35	5/28	1.10					
ROCKY BASIN	11/11	4.90					3/30	30.69	5/01	5.44	5/27	2.28	7/03	3.20	9/30	6.19	29.56
SOAPSTONE RS	12/31	11.06	1/29	4.49	2/26	2.34	3/31	1.89	4/29	2.41	5/27	1.77			1/07	5.90	52.41
TRIAL LAKE	12/31	18.53	1/29	6.85	2/26	3.03	3/31	3.46	4/29	4.09	5/27	2.27			9/29	5.66	29.62
VERNON CREEK	10/30	1.46			2/25	11.76	3/31	1.44	4/29	3.77	5/28	0.96			9/30	7.60	26.99

DUCHESNE-GREEN RIVER BASIN

[illegible]

U T A H P R E C I P I T A T I O N D A T A
1971 WATER YEAR

STATION NAME	OCT.-DEC.	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY-SEPT.	TOTAL
INDIAN CANYON	12/29 7.38	1/26 1.65	2/24 2.29	3/24 0.63	4/26 2.52	5/25 1.80	7/07 1.25	9/29 2.17	19.69
JULIUS PARK	12/29 6.59	1/28 1.98	2/24 1.50	3/24 0.32	4/26 3.20	5/25 3.52	6/29 1.98	9/27 3.37	22.46
KINGS CABIN UP	10/29 1.94		2/22 8.75	3/22 0.56	4/21 1.41	5/26 4.77	6/28 2.11	9/24 2.92	22.46
LAKE BASIN			2/26 13.80		4/28 3.32	5/28 2.47	7/09 1.61		
LAKEFORK BASIN								8/18 .	42.68
LAKE FORK MTN	10/23 1.14	1/28 8.25	2/25 1.54	3/25 0.61	4/27 3.75	5/27 2.96	7/10 1.70	9/29 3.51	23.46
LIGHTNING LAKE								9/10 .	40.53
MCCOY PARK								1/06 .	25.08
MOSBY MOUNTAIN	12/29 5.83	1/28 1.60	2/24 1.42	3/24 0.39	4/23 3.58	5/25 3.10	6/29 1.58	9/27 4.48	21.98
PARADISE PARK	12/29 7.63	1/28 2.39	2/24 1.22	3/24 0.42	4/26 3.73	5/25 3.60	6/29 2.30	9/27 4.00	25.29
REYNOLDS PARK								9/09 .	33.97
ROCK CREEK	10/26 1.35			3/30 10.53	4/29 2.12	5/25 1.90	7/09 1.51	9/28 3.50	20.91
SHADOW LAKE								8/24 .	36.87
SPIRIT LAKE			2/23 12.80	3/22 1.48	4/21 3.47	5/24 5.81	6/28 2.17	9/24 4.92	30.65
JACKSON PARK	10/23 1.10			3/26 10.53	4/29 3.84		7/08 9.84	9/60 5.00	26.47
STEEL CRK PARK				4/01 3.45					
WINDY PARK								8/18 .	22.23
TOKEWANNA PEAK								9/28 .	34.74

P R I C E - S A N R A F A E L - F R E M O N T R I V E R B A S I N S

BLACKS FLAT UM	11/23 3.47		2/23 7.44	3/22 2.55	4/29 1.77	5/26 2.02	6/29 0.45	9/27 6.01	23.71
BUCKBOARD FLAT	12/21 6.83		2/22 3.90	3/23 1.10	4/29 0.80	5/28 2.10	6/29 0.70		
BUCK FLAT	12/29 12.65	1/28 1.30	3/03 4.85	3/29 1.80	4/28 2.00	5/31 2.45	6/28 0.40	9/29 4.95	30.40
CAMP JACKSON	12/22 8.75		2/23 1.85	3/24 0.60	4/29 1.10	5/28 2.75	6/29 0.30		
DILLS CAMP	12/28 10.40		2/24 2.95	4/01 2.85		5/26 3.25	6/28 0.40	9/29 3.80	23.65
FISH LAKE	11/23 3.01		2/23 4.70	3/22 1.76	4/26 1.62	5/26 1.95	6/29 0.53	9/27 6.23	19.80
GOOSEBERRY RES	12/29 12.11	1/27 2.03	2/25 3.00	3/26 1.92	4/28 2.76	5/24 1.40	6/29 0.95	9/30 4.10	28.27
LASAL MTN UP	12/23 9.55		2/24 2.25	3/25 1.00	4/27 3.30	5/27 2.70		1/05 3.50	20.80
MUD CREEK	12/30 7.95	1/28 1.65	2/25 2.15	3/29 1.75	4/28 1.70	5/28 1.00	6/29 0.25		
ORANGE OLSEN	12/30 4.60	1/29 0.75	3/01 2.15	3/26 0.90	4/29 0.70	5/28 2.00	6/29 0.50	9/29 4.30	33.45
RED PINE RIDGE	12/30 13.70	1/29 1.90	3/01 4.85	3/27 3.30	4/29 2.90	5/27 2.35	6/29 0.75	9/30 3.90	20.60
STUART RS OLD	12/30 6.30			3/30 5.60	4/30 1.70	5/27 2.35			
WHITE RIVER I	11/30 5.30		2/26 7.10	3/26 1.10	4/29 2.80	5/28 1.80			

S E V I E R - B E A V E R R I V E R B A S I N S

BEAVER DAMS	12/28 7.80		2/23 3.95	3/25 2.08	4/27 2.17	5/26 0.75	6/29 0.21	9/30 4.09	21.05
BIG FLAT	12/29 10.95	1/27 0.60	2/22 2.45	3/24 1.47	4/27 2.28	5/25 4.38		0/05 8.89	31.02
BOX CREEK	11/24 4.39		2/24 6.71	3/30 2.20	4/26 1.49	5/26 3.02	6/29 0.50	9/28 5.55	23.86
CASTLE VALLEY	11/27 4.00		2/24 8.63	3/30 1.24	4/26 1.46	5/25 2.60	6/30 0.76	9/29 6.16	24.85
CEDAR BREAKS	10/30 1.20								
DUCK CREEK RS	12/29 9.40	1/28 0.65	2/25 2.71	3/26 0.52	4/26 1.51	5/24 3.64	6/30 0.95	9/29 5.16	24.54

UTAH PRECIPITATION DATA

1971 WATER YEAR

STATION NAME	OCT.-DEC.	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY-SEPT.	TOTAL
FARNWORTH LAKE	12/30 12.31	1/28 1.34	2/24 5.60	3/31 4.92	4/29 3.43	5/27 1.82	6/29 1.82	1/01 5.67	36.16
GBRC HDQTRS	12/31 12.20	1/29 1.65	2/26 3.50	3/31 2.55	4/30 3.55	5/28 1.77	6/30 0.60	1/05 5.05	30.87
GBRC MEADOWS	12/31 16.00	1/29 2.30	2/26 4.22	3/31 4.22	4/30 3.95	5/28 2.50	6/30 1.05	1/05 4.66	38.93
GBRC OAKS	12/31 7.07	1/29 1.21	2/26 1.94	3/31 1.38	4/30 2.25	5/28 0.87	6/30 0.60	1/05 3.55	18.87
GOOSEBERRY RS	12/30 10.26	1/28 1.34	2/24 3.22	3/30 3.52	4/29 2.10	5/27 1.14	6/29 0.65	1/01 2.45	24.68
KIMBERLY MINE	12/30 11.75	1/28 1.08	2/25 3.64	3/26 3.60	4/27 2.17	5/25 2.63	6/30 1.18	9/29 7.93	33.98
MAMMOTH RS 2	12/29 12.99	1/27 1.80	2/25 3.40	3/26 2.05	4/28 3.55	5/24 1.22	6/29 0.93	9/30 3.93	29.87
MERCHANT VALLY	12/29 9.85	1/27 0.35	2/22 2.28	3/24 1.40	4/27 2.12	5/25 3.39	6/29 0.93	1/04 7.08	26.47
MT BALDY RS	12/28 12.00		2/23 5.25	3/25 3.45	4/27 2.00	5/26 1.70	6/29 0.05	9/30 4.93	29.38
OAK CREEK	11/02 2.19			3/31 10.76	4/28 2.76	5/29 1.44	6/30 0.80	0/01 4.27	22.22
PANGUITCH LAKE	11/27 2.28		2/24 4.25	3/25 0.75	4/26 0.62	5/24 1.32	6/30 0.59	9/29 5.12	14.93
PINE CREEK	11/25 10.32		2/26 13.56	3/29 5.29	4/29 3.63	5/29 2.57			
SHINGLE MILL	12/31 9.92		2/27 3.92	3/29 3.09	4/29 2.72	5/27 1.99	6/30 0.60	9/29 2.22	24.46
WIDSTOE-ESCL 3	12/30 6.11	1/27 0.48	2/26 3.14	3/29 0.40	4/27 1.55	5/28 2.15	6/30 0.33	9/29 4.35	18.51
WIDSTOE RS	12/30 4.51	1/27 0.26	2/26 0.90	3/29 0.15	4/28 0.15	5/24 1.24	6/30 0.45	9/29 4.89	12.55

COAL CROWN - VIRGIN - ESCALANTE RIVER BASINS

LITTLE GRASSY	10/28 0.00		2/25 9.22	4/02 0.42	4/28 1.18	6/01 2.55	6/29 0.25	9/29 4.25	17.87
LONG FLAT	10/28 0.08		2/26 8.87	3/30 0.95	4/28 2.22	6/01 2.33	6/29 0.14	1/07 7.52	22.11
TALL POLES	12/30 7.48	1/28 0.65	2/23 3.25	3/25 2.00	4/27 2.00	5/28 2.10	6/29 0.20	0/11 7.50	25.18
WEBSTER FLAT	12/30 10.70	1/28 1.00	2/24 3.65	3/26 1.10	4/28 1.07	5/24 3.37	6/29 1.20	1/08 7.27	29.36
YANKEE RES	10/30 1.63		2/23 8.95	3/30 1.35	4/27 2.65	5/28 3.50	6/29 0.55	0/11 4.77	23.40
MIDWAY VALLEY	12/30 10.96	1/28 0.95	2/24 2.65	3/25 0.60	4/27 2.20		1/06 13.17		30.53

Agencies Cooperating in Utah Snow Surveys

U.S. GOVERNMENT AGENCIES

U.S. Department of Agriculture
Soil Conservation Service
Forest Service
U.S. Department of Commerce
Weather Bureau
U.S. Department of Interior
Bureau of Reclamation
Geological Survey
National Park Service

STATE AGENCIES

Utah State University
Utah Fish and Game Department
Utah State Department of Natural
Resources, Division of Water Rights
Bear River Commissioner
Price River Commissioner
Provo River Commissioner
Sevier River Commissioners
Spanish Fork River Commissioner
Utah Lake and Jordan River Commissioner

MUNICIPALITIES

Manti
Salt Lake City

ORGANIZED PUBLIC AGENCIES

Beaver River Water Users Association
Board of Canal Presidents - Jordan River
Emery Canal and Reservoir Company
Moon Lake Water Users Association
Ogden River Water Users Association
Provo River Water Users Association
Strawberry Water Users Association
Sevier River Water Users Association

PRIVATE AGENCIES

Kaiser Steel Corporation

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
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SALT LAKE CITY, UTAH 84111

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Furnishes the basic data
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domestic and municipal water
supply, hydro-electric power
generation, navigation,
mining and industry

*"The Conservation of Water begins
with the Snow Survey"*